ficiency of 40 inches, or practically the precipitation of one year since 1910. The unprecedented length of time, during which dry weather has continued, thus becomes a potent factor in the discussion of the present dry spell and has added largely to the severity of the crop losses.

This condition has resulted in the greatest scarcity of available water ever known in this usually well watered section. The James River, a stream which has an average flow of 1,500 cubic feet per second, is practically dry, and deep springs and wells, considered never failing, have gone dry. The available water supply of Springfield was so low that the use of water except for necessities was prohibited by order of the mayor of the city. Many farmers have been hauling water for two months, at serious loss and inconvenience, in order to keep their stock alive; and dust is so deep on country roads as to seriously impede traffic, especially by automobile. Pastures are burned up and little or no rough feed remains in the country. Farmers and dairymen are buying food for their stock, and milk and butter are selling at the usual midwinter prices. Thousands of trees have died and large numbers have been seriously injured, both the cultivated and wild. Many apple trees are shedding their buds, and the prospect for fruit next year is believed to be small. Nearly one-half the trees shed their leaves in August, and in many cases the leaves would shrivel and die in a day, as though the tree had been cut down or girdled. This condition apparently resulted from unusually low humidity during the latter portion of August, a reading of 14 per cent being reported from this station on the 30th. Complaints were made from all over the city of paper cracking and falling from the walls, and the increased danger from fires necessitated the establishment of patrols for the safety of the city.

The wheat crop is estimated as above the average, oats were poor, corn is from 33 to 40 per cent of the average, early potatoes were average, but late potatoes, gardens, hay, and forage crops as almost a total loss. The sowing of fall wheat has been delayed past the usual time, but many are sowing since rains.

All of the rainfall during the summer was of a local and restricted type, and in many cases good showers were reported as covering not more than 1 or 2 square miles. Springfield reported 1.75 inches on July 30, while 1 mile north and the same distance south no rain fell. As a result, occasional farms will be found with good crops, while perhaps adjoining farms have no crop, a condition more noticeable this year than ever before.

In 1901, 51 days with temperatures above 90° occurred during June, July, and August, as against 45 during the present season, and while the day temperatures were higher in 1901 than the present year, the excess in temperature during the growing season, April to August, was practically the same. August had an average temperature this year of 82°, the highest monthly August temperature ever reported at this station, and the highest monthly temperature ever reported here with the exception of July, 1901. The drought conditions were aggravated during the present year by an unusually large percentage of sunshine, excessively low humidity and vapor pressure, and with winds above the average.

Bankers in this place generally report collections as slow, and as likely to continue thus for a year or more. Much surplus stock has been disposed of on account of the scarcity of feed, but reports from among farmers do not indicate greater discouragement than in 1901, and high prices are being realized for all products.

Typhoid fever, hay fever, and asthma have been unusually prevalent during the present year, due it is believed to the low-water supply; at the same time there has been a marked decrease in the number of flies during the summer, as compared with previous years.

THE DROUGHT OF 1913 AT LINCOLN, NEBR.

By G. A. LOVELAND, Section Director.

The dry period of 1913 at Lincoln, Nebr., began on June 8 and continued until September 7. During this period of three months only 2.84 inches of rain fell, which is but 25 per cent of the normal. Only two showers occurred with sufficient rainfall to be beneficial to vegetation during this time, 0.62 inch on the 26 and 0.99 on the 28th of July. This is the smallest rainfall in 92 days at this time of the year ever recorded at Lincoln, Nebr. The years that most nearly approach this for small rainfall are 1881, 1886, and 1894, but in each of these years while the rainfall for July and August was small that for June and September was ample.

The temperature was high the last half of June and the first half of July, but the remarkably high temperatures of the hot period did not begin until July 13 and lasted until the 17th, 5 very hot days with maximum temperatures from 102° to 109°, then followed a week of moderate temperature after which the real heated period began. From July 26 to September 7 high temperatures continued almost without a break, only on four of the 44 days was the mean temperature below normal, and then but slightly. The maximum temperature was 100° or above on 23 of the 44 days, was below 95° on 11 days, and below 90° on 7 days.

The only hot period that compares with this occurred in 1901. This began June 23 and ended August 1. In these 40 days the maximum temperature was 100° or over on 25 days, was below 95° on 9 days and below 90° on 4 days. The mean temperature for the 40 days was 85.6° and for the hottest 44 days, June 21 to August 3, the mean temperature was 84.6°. For the 44 days, July 26 to September 7, 1913, the mean temperature was 83.5°.

For the period June 1 to September 7, 1913, the average temperature was 79.9°, the highest on record for the same period, although some of the individual months were not as high as in 1901.

The dry weather materially injured vegetation. There is no official estimate of the damage to crops obtainable, but the corn crop in this section will be exceedingly light, almost a failure, and all grass and forage crops are very light, except the first cutting of alfalfa. All fruit and garden vegetables were much injured. The water here is nearly all pumped from deep wells and was not affected.

THE HEAT AND DROUGHT OF 1913 AT OMAHA, NEBR.

By L. H. WELSH, Local Forecaster.

An examination of the records of this station shows that the present period of drought and heat has never been exceeded in intensity and duration, including at it does practically all of July, all of August, and the first week of September. While less precipitation than fell during July has been recorded in other months of the same name a few times in previous years, and the mean temperature has been equaled once and exceeded once, they were not coincident, and were followed by cooler and wetter weather during August than was the case this year.